

1. A radio frequency transmission system incorporating an envelope delay within a broadcast signal to achieve a directional pattern, the system comprising:

an oscillator configured to provide an analog carrier wave;

a delay stage in electrical communication with the oscillator to receive the analog carrier wave, the delay stage configured to delay the analog carrier wave by a delay amount; and

a modulator in electrical communication with the delay stage to receive the analog carrier wave, the modulator further receiving analog audio and configured to provide amplitude modulation of the analog carrier wave with the analog audio to thereby generate an amplitude modulated carrier wave with an envelop delay.

2. The radio frequency transmission system of claim 1 further comprising, an amplifier in electrical communication with the modulator and configured to amplify the power of the amplitude modulated carrier wave.

3. The radio frequency transmission system of claim 1 wherein the delay stage comprises:

an input buffer for receiving the analog carrier wave; and

an output buffer for transmitting the analog carrier wave with a delay.

4. The radio frequency transmission system of claim 1 wherein the delay stage comprises a programmable delay for delaying the carrier wave by a variable delay amount.

5. The radio frequency transmission system of claim 4, wherein the programmable delay is configured for manual adjustment to establish the delay amount.

6. The radio frequency transmission system of claim 4 further comprising a processor in electrical communication with the programmable delay to enable adjustment of the delay amount by the processor.

5 7. The radio frequency transmission system of claim 6 further comprising a user interface in electrical communication with the processor.

8. The radio frequency transmission system of claim 7 further comprising:
an antenna in electrical communication with the modulator and configured to
10 broadcast the amplitude modulated carrier wave; and
an antenna feedback in electrical communication with the antenna and the processor to provide feedback relating to the broadcast signal.

9. The radio frequency transmission system of claim 4, wherein the
15 programmable delay includes,
a plurality of switches coupled in series, and
a plurality of delay components coupled to the switches, the switches and delay components configured to provide a variable delay amount through operation of the switches.

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10. A method for transmitting radio frequency and incorporating an envelope delay within a broadcast signal to achieve a directional pattern, the method comprising:

generating an analog carrier wave;

delaying the analog carrier wave by a delay amount;

5 receiving analog audio;

modulating the analog carrier wave with the analog audio to produce an amplitude modulated carrier wave with an envelope delay.

11. The method of claim 10 further comprising amplifying the power of the amplitude modulated carrier wave.

12. The method of claim 10 wherein delaying the analog carrier wave is performed by a programmable delay that provides a variable delay amount.

13. The method of claim 12 further comprising manually adjusting the programmable delay to set a delay amount.

14. The method of claim 12 further comprising:

coupling the programmable delay to a processor; and

20 the processor adjusting the programmable delay to set a delay amount.

15. The method of claim 14 further comprising coupling the processor to a user interface to enable user adjustment of the delay amount.

16. The method of claim 10 further comprising:

transmitting the amplitude modulated carrier wave to provide the broadcast signal; and

providing feedback relating to the broadcast signal.

17. The method of claim 12, wherein the programmable delay includes,
a plurality of switches coupled in series, and

5 a plurality of delay components coupled to the switches, the switches and delay
components configured to provide a variable delay amount through operation of the
switches.

18. A radio frequency transmission system incorporating an envelope delay
10 within a broadcast signal to achieve a directional pattern, the system comprising:

an oscillator configured to provide an analog carrier wave;

a programmable delay stage in electrical communication with the oscillator to
receive the analog carrier wave, the programmable delay stage configured to delay the
analog carrier wave by a delay amount;

15 a modulator in electrical communication with the delay stage and configured to
provide amplitude modulation of the analog carrier wave with analog audio to thereby
generate an amplitude modulated carrier wave with an envelope delay;

an amplifier in electrical communication with the modulator and configured to
amplify the power of the amplitude modulated carrier wave; and

20 a processor in electrical communication with the delay stage, the oscillator, and
the amplifier and configured to enable adjustment of the analog carrier wave, the delay
amount, and power amplification.